

We claim:

1. A system for controlling access to a communications network associated with a network service, the system comprising:

a service controller, comprising at least one session initiation protocol (SIP) proxy server, that receives a request for the network service from an initiating end system and instructs the initiating end system to perform a connection setup request, the instructing comprising specification of a unique identifier to be included in the connection setup request, the unique identifier correlating the connection setup request and the network service; and

at least one switching device that receives the connection setup request from the initiating end system, the switching device processing the connection setup request based on the unique identifier and at least one of service policy and logic associated with the network service, and performing one of establishing a network connection to a terminating end system and rejecting the connection setup request based on the processing, in accordance with the at least one of service policy and logic.

2. The system for controlling access to a communications network associated with a network service according to claim 1, in which the service controller pushes the at least one of service policy and logic into the at least one switching device prior to instructing the originating end system to perform a connection setup request.

3. The system for controlling access to a communications network associated with a network service according to claim 2, in which the connection setup request is in accordance with resource reservation protocol (RSVP) and the pushing the at least one of service policy and logic into the switching device is in accordance with common open policy service - policy rule (COPS-PR) protocol.

4. The system for controlling access to a communications network associated with a network service according to claim 1, in which the at least one switching device pulls the at least one of service policy and logic from the service

controller after receiving the connection setup request from the initiating end system.

5. The system for controlling access to a communications network associated with a network service according to claim 4, in which the connection setup request is in accordance with resource reservation protocol (RSVP) and the pulling the at least one of service policy and logic into the switching device is in accordance with common open policy service (COPS) protocol.

6. The system for controlling access to a communications network associated with a network service according to claim 1, in which the at least one switching device queries the service controller and receives information representing application of the at least one of service policy and logic in response to the query.

7. The system for controlling access to a communications network associated with a network service according to claim 6, in which the connection setup request is in accordance with resource reservation protocol (RSVP) and the querying the service controller by the switching device and the receiving information representing application of the at least one of service policy and logic in response to the query is in accordance with common open policy service (COPS) protocol.

8. The system for controlling access to a communications network associated with a network service according to claim 1, the at least one switching device comprising an Internet protocol router.

9. The system for controlling access to a communications network associated with a network service according to claim 8, in which the connection setup request is in accordance with resource reservation protocol (RSVP).

10. The system for controlling access to a communications network associated with a network service according to claim 1, the at least one switching device comprising a multi-protocol label switching (MPLS) label switching router.

11. The system for controlling access to a communications network associated with a network service according to claim 10, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

12. The system for controlling access to a communications network associated with a network service according to claim 1, the at least one switching device comprising an optical switching device controlled by generalized multi-protocol label switching (GMPLS).

13. The system for controlling access to a communications network associated with a network service according to claim 12, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

14. The system for controlling access to a communications network associated with a network service according to claim 1, the at least one switching device comprising a time division multiplexing (TDM) switching device controlled by generalized multi-protocol label switching (GMPLS).

15. The system for controlling access to a communications network associated with a network service according to claim 14, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

16. A system for controlling access to a communications network associated with a network service, the system comprising:

a service controller, comprising at least one session initiation protocol (SIP) proxy server, that receives a request for the network service from an initiating end system to access the network service, provides the initiating end system with an enabling certificate, comprising at least one of service policy and logic associated with the network service, and a unique setup identifier, and instructs the initiating end system to perform a connection setup request that includes the certificate and the unique identifier; and

at least one switching device that receives the connection setup request from the initiating end system, the switching device processing the connection setup request based on the certificate and the unique identifier and performing one of establishing a network connection and rejecting the connection setup request based on the processing, in accordance with at least the certificate.

17. The system for controlling access to a communications network associated with a network service according to claim 16, the at least one switching device comprising an Internet protocol router.

18. The system for controlling access to a communications network associated with a network service according to claim 17, in which the connection setup request is in accordance with resource reservation protocol (RSVP).

19. The system for controlling access to a communications network associated with a network service according to claim 16, the at least one switching device comprising a multi-protocol label switching (MPLS) label switching router.

20. The system for controlling access to a communications network associated with a network service according to claim 19, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

21. The system for controlling access to a communications network associated with a network service according to claim 16, the at least one switching device comprising an optical switching device controlled by general multi-protocol label switching (GMPLS).

22. The system for controlling access to a communications network associated with a network service according to claim 21, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

23. The system for controlling access to a communications network associated with a network service according to claim 16, the at least one switching

device comprising a time division multiplexing (TDM) switching device controlled by generalized multi-protocol label switching (GMPLS).

24. The system for controlling access to a communications network associated with a network service according to claim 23, in which the connection setup request is in accordance with one of RSVP-te and constraint-based routed label distribution protocol (CR-LDP).

25. A method for controlling access to capabilities of an Internet protocol (IP) network associated with an IP network service, the method comprising:

processing at a service control, in accordance with a session initiation protocol (SIP), a request for the IP network service received from an initiating end system, the processing comprising instructing the initiating end system to perform a connection setup request and specifying a unique identifier to be included in the connection setup request, the unique identifier correlating the connection setup request and the IP network service;

transferring at least one of policy and logic of the IP network service to at least one router from the service control;

receiving from the initiating end system, at the at least one router, the connection setup request, including the unique identifier;

processing the connection setup request based on the unique identifier and the at least one of policy and logic associated with the IP network service; and

performing one of establishing an IP network connection to a terminating end system and rejecting the connection setup request based on the processing, in accordance with the at least one of policy and logic.

26. The method for controlling access to capabilities of an IP network according to claim 25, in which the transferring the at least one of policy and logic of the IP network service to the at least one router comprises pushing the at least one of policy and logic from the service control prior to instructing the initiating end system to perform the connection setup request.

27. The method for controlling access to capabilities of an IP network according to claim 25, in which the transferring the at least one of policy and logic of the IP network service to the at least one router comprises pulling the at least one of policy and logic from the service control after instructing the initiating end system to perform the connection setup request.

28. The method for controlling access to capabilities of an IP network according to claim 25, in which the connection setup request is in accordance with resource reservation protocol (RSVP).

29. A method for controlling access to capabilities of an Internet protocol (IP) network associated with an IP network service, the method comprising:

processing at a service control, in accordance with a session initiation protocol (SIP), a request for the IP network service received from an initiating end system, the processing comprising instructing the initiating end system to perform a connection setup request and specifying a unique identifier to be included in the connection setup request, the unique identifier correlating the connection setup request and the IP network service;

transferring information representing the application of at least one of policy and logic of the IP network service to at least one router from the service control;

receiving from the initiating end system, at the at least one router, the connection setup request, including the unique identifier;

processing the connection setup request based on at least the unique identifier and the information representing the application of at least one of policy and logic associated with the IP network service; and

performing one of establishing an IP network connection to a terminating end system and rejecting the connection setup request based on the processing, in accordance with the information representing the application of at least one of policy and logic.

30. The method for controlling access to capabilities of an IP network according to claim 29, in which the transferring the information representing the application of at least one of policy and logic of the IP network service to the at least one router comprises replying to a query from the at least one router after instructing the initiating end system to perform the connection setup request.

31. The method for controlling access to capabilities of an IP network according to claim 29, in which the connection setup request is in accordance with resource reservation protocol (RSVP).

32. A method for controlling access to capabilities of an Internet protocol (IP) network associated with an IP network service, the method comprising:

processing at a service control, in accordance with a session initiation protocol (SIP), a request for the IP network service received from an initiating end system, the processing comprising instructing the initiating end system to perform a connection setup request and specifying a unique identifier to be included in the connection setup request, the unique identifier correlating the connection setup request and the IP network service;

providing to the initiating end system a certificate that includes at least one of policy of the IP network service, logic of the IP network service, and information representing at least one of the policy and the logic of the IP network service;

receiving from the initiating end system, at the at least one router, the certificate and the connection setup request, including the unique identifier;

processing the connection setup request based on at least one of the certificate and the unique identifier; and

performing one of establishing an IP network connection to a terminating end system and rejecting the connection setup request based on the processing.

33. The method for controlling access to capabilities of an IP network according to claim 32, in which the connection setup request is in accordance with resource reservation protocol (RSVP).